REPORT

OF

IDRC BOARD REVIEW PANEL - CO-OP

BOARD REVIEW PANEL:

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IDDR: Report of the IDRC Board Review Panel - COOP

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INTRODUCTION

All comments in the Report relate directly to the Terms of Reference IDRC Board Review Panel - Co-op, dated February 27, 1986. The detailed terms of reference are included as Annex I.

The purpose of the review is:

> To review the division's mandate, past and present performance, and strategic intentions and to comment on the effectiveness of the Division's activities in fulfilling the Centre's mandate and objectives.

The review panel is expected to assess CPD's program development, delivery and management on a variety of counts; to evaluate past program activities of the division and its current operations, as well as the policies developed.

Because Cooperative Program Division (CPD) has co-signing authority for cooperative projects that are dealt with by other divisions, the intent is to review all cooperative programs, not only those within CPD. There is a distinct difference between CPD's activities and those of the other divisions, besides the fact that the Director of CPD has authority for Cooperative Projects in the other divisions. CPD was established to implement cooperative programs, and also to determine if there were other areas of development that would be of special value and which were not being undertaken by IDRC. However, these new projects could be supported only where Canadian counterparts are required.

The Board expects that research supported by the Centre will be of a practical, applied kind, that it be for the poorest segment of the population, that projects will be proposed by scientists from developing countries and that the research will be managed and conducted by them so that the benefits remain within the developing country itself. Cooperative projects (CPs) provide a variation on this theme in that expertise or competence available in Canada should be used in cooperation with the LDC scientists. The scientists from the Canadian institutions would then act as counterparts to assist the scientists from developing countries to achieve their own goals.

Numerous reports have been consulted, but the most significant of course is the Cooperative Programs Division statement. The panel had some difficulties because of the late presentation of the statement on January 19, 1987, but we feel that we have covered all significant points. A brief appraisal of the statement is given in Annex II.

Interviews have been held with the Program Officers of CPD, with several senior members of the other program divisions, and with a good many of their Program Officers. They were invited to give their views on cooperative projects as a concept and cooperative programs as now being handled in the Centre. Several of the existing CPs were chosen for more detailed examination through reading of the project summaries, and by discussion with the appropriate Program Officers of IDRC and with representatives of the Canadian cooperating agency. These interviews, which include consultations made by Dr. McGinnis, Dr. Butros, Dr. Hamelin, and Dr. J.M. Harrison (the review consultant), should give a reasonable cross-section of CPs from the perspective of IDRC and the Canadian counterparts. Opportunities to discuss some of these with scientists from "recipient" institutions, especially those interviewed by Professor Butros, should give some idea of the LDC viewpoint. In addition, Dr. J.A. Ramirez, consultant for IDRC, provided a report on his review of selected projects in Latin America and the Caribbean.

Annex III gives a brief summary account of each of the 36 projects reviewed. Included are the summarized comments of Program Officers of IDRC and, where appropriate, summarized remarks made by Canadian counterparts. In several instances, comments made by people from the recipient country are included as well. The 36 projects involve institutions in 20 different countries of varying degrees of development.

Annex IV is a short review of the Internal Audit Report, Cooperative Programs Division, April 1985. This review was made by our consultant only.

Annex V is a list of people consulted by members of the Panel and the two consultants.

Throughout the text, the use of the words "expert" or "expertise" has been avoided in favour of the terms "competent" or "competence". An expert is easy to find but a competent individual, who has that most uncommon of talents, "common sense", is apt to be far more useful. We also use the term "counterpart" for Canadian agencies or institutions, rather than "recipient" as in some IDRC documents. "Collaborative" and "cooperative" are used interchangeably through the Report.

EXECUTIVE SUMMARY

The Cooperative Program Division was established by being given three duties:-

1) To meet the requirements of establishing cooperative programs in the Centre as defined by the G-77 at the United Nations Conference on Science and Technology for Development (UNCSTD) in 1979;

2) To determine if there were areas other than those covered by the "regular" divisions that merited support by IDRC in the light of its financial abilities and its potential technical capabilities;

3) To ensure that cooperative projects proposed by other divisions meet the Centre requirements for such projects, it being the responsibility of the other divisions to ensure the technical quality of the proposal.

We consider that the Division has been successful in meeting the above responsibilities. The earth sciences sub-program meets important needs as seen by the LDCs. Judging by the requests that have been received for support of technology for local enterprises, the area meets obvious needs. However, we are concerned that a decision be made in the near future on what particular types of projects will be supported. The proposed program on "shelter research" fulfils a need and its implementation will be an interesting experiment for the Centre because of the inter-divisional inputs that will be required.

The three objectives that the Centre hoped to achieve by cooperative programs are:-

1) To develop scientific and technological capacity in Third World institutions;

2) To create channels of communication between scientists in Canada and those in the Third World;

3) To influence the direction of Canadian research towards Third World concerns.

The program is relatively new and under circumstances that prevailed in the earlier years, much of the contact has been through the "old boy" networks. However, several of the projects depended on IDRC to make the appropriate linkage and undoubtedly this procedure will increase in importance through time. Some Third World scientists consider that they themselves had too little to do with selecting the Canadian cooperating institution. Since the Centre is likely to have an increasingly higher proportion of "match making" to do, increasing care will need to be taken to ensure that the Third World institution is involved from the beginning of the cooperative process. This procedure, of course, will add some time to the preparatory activities, which could be reduced by the regional representative of Co-op acting as the intermediary. We consider the cooperative concept to be an excellent way of increasing the scientific and technological capacity of the Third World institutions.

The creation of channels of communication between Canadian and Third World scientists will undoubtedly improve and, as it does, the results of successful research in Canada can be transferred better to people in the Third World. As more Canadian institutions become involved in CPs, the flow of information will surely increase. Most of the projects examined by us clearly show that the transfer of procedures, technology and know-how are an integral part of the process. Undoubtedly, the research involvement will increase with time.

At present, we doubt that there has been a great deal of influence on Canadian researchers to carry out studies that relate to Third World concerns. This, however, should change when the current world-wide economic situation improves. This is especially true in Canada where Government funding, which is the principal source of revenues for research, is being tightened and researchers discouraged from working on anything but Canadian problems. Researchers can do only what they receive money to do. With respect to the operation of CPD itself, probably the biggest immediate help to more success in its dealings with Third World institutions would be the provision of regional officers at all Centre regional offices. We understand that there are three so far established; the remainder should be established as quickly as conditions permit.

We are somewhat concerned by comments in the Divisional Statement that cooperative projects ought to be approximately equal in content between the participating institutions. We consider that each project should be judged on its merits and, as long as each partner has equity - has the right to help to formulate, organize and plan the project - the contribution in kind or in money is secondary except, of course, that cooperative projects build on existing capacity. We hope that the "mandate" for CPD will not be too sharply defined and have too many regulations. The more precise the terms of reference, the less opportunity there is to make decisions based on merit.

Judging by the comments received from Third World scientists, the collaborative project is an excellent means for Canadian scientists and engineers to respond to Third World needs. It should be noted that the collaborative concept is not new in the Centre; AFNS, at least, has been using collaborative projects as a means of furthering its objectives for many years. What is new is the establishment of collaborative projects as an overall activity for IDRC and the collaborative arrangement being used to develop new types of projects within the Centre. Both these procedures are important and we think successful.

Cooperative Programs Division is unique in having been instructed to develop new sub-programs or activities that IDRC could consistently support, and that it was given the responsibility for ensuring that the good projects that did not fall within the activities of other divisions, should not be overlooked and should be funded on an "opportunity" basis. These responsibilities seem to have been satisfactorally met, although we have not attempted to rate projects that might have been turned down compared with those that were accepted. However, considering the limited funding available for such projects, those accepted for support seem to us satisfactory.

What did seem unusual to us, if not unreasonable, is the fact that CPD could fund only projects that require Canadian counterpart activity. We think that the inability of CPD to support projects in the fields selected, but which do not require Canadian participation, goes against the objectives of IDRC as a whole. We realize that matters cannot be changed instantly and we are gratified that some "regular" funds will be provided, beginning in fiscal 87/88. In effect, we

believe that CPD should become a "regular" division. If this suggestion is followed, the division needs to be renamed and some other means should be found to ensure that the window is kept open and that the cooperative projects meet Centre requirements. The Vice-President for Collaborative and Information Programs seems to be the logical focus for these responsibilities. We realize that such modifications cannot be made instantaneously but will require several years to be fully operational. It also seems to be an appropriate time to consider making the cooperative method an integral part of all divisions of IDRC and leaving it to the managers to determine which projects merit Canadian counterparts and which are part of the regular procedures. We think that more attention should be given to having Canadian partners spend at least part of their cooperative time in the developing country. They should also be encouraged to provide support to the project after its nominal completion.

MANDATE OF CPD

The responsibilities assigned to the Division are reasonably clear. These are a direct outgrowth of the decision made by the Board of Governors to follow, as nearly as practicable, the proposals made at the United Nations Conference on the Application of Science and Technology for Development (UNCSTD) in Vienna, 1979. These included, amongst others, an increase in the proportion of research and development expenditures of industrialized countries to the solution of jointly identified problems of primary interest to developing countries; direct linkages should be established between the science systems of industrialized and developing countries; priority should be given to those projects which contribute the most to strengthening and promoting scientific and technological capacities in developing countries. One of the principal implications of the UNCSTD Conference was that the industrialized countries should place their expertise where the developing countries felt it was needed, although the planning and execution of the projects should be done jointly. The requirement that Canadian competence be utilized was a departure from what might be called the traditional role of IDRC. The guidelines on cooperative programs state that CPs are "designed to promote access by developing countries to research strength in Canada"; they are "not designed to establish new research capacity in Canada nor to finance technical assistance projects". Thus, the CPs are complementary to regular projects. From these directions, the Centre acquired three important new objectives:

(1) to develop the scientific and technological capacity of the participating Third World institutions or groups by improving their opportunities for collaboration with the Canadian part of the international scientific community;

(2) to create channels of communication among scientists through which the results of successful research in Canada can be transferred to researchers in the Third World;

(3) to influence the direction of Canadian research towards Third World concerns.

In order to carry out these responsibilities, a unit was created whose primary responsibility was to develop cooperative programs in fields where Canadian expertise would be significant in assisting developing countries to meet their needs, both for solving problems and for training people to solve problems. The unit was funded from new monies provided by the Parliament of Canada. It was considered equitable that one-half the funds should be divided amongst the existing regular divisions - the A Budget - and half would remain with the Cooperative Program Division - the B Budget. However, CPD is responsible for ensuring that the whole of the CPs' budget is spent according to the guidelines. Thus it has a theoretical veto on other divisions, if they do not meet CP guidelines. In addition, it was required to determine if there were other activities outside of regular divisions that merited attention by IDRC. For those projects so discovered, the B Budget was allocated.

The bulk of the report is an appraisal of the efforts to meet these objectives.

ISSUES

There are a good many issues to consider in this review. Naturally most of them relate directly to Cooperative Programs Division, but some relate to other Program Divisions. It seems to us that the most important so far identified, numbered in crude order of significance, are:

1. Does the cooperative mode fill a need for the Third World? And if it does, are there ways of improving the delivery?

2. Has CPD succeeded in identifying new areas for IDRC to support? And are these the most suitable areas?

3. Should CPD be limited to supporting these areas only in the cooperative mode?

4. Should CPD continue as it is, or should it become a "regular" division?

5. If CPD is to become a "regular" division, how does IDRC keep the "open window" for supporting good projects outside the "regular" divisions?

6. Should cooperative projects become a "normal" activity of all divisions, and under what conditions?

7. Is there a rational method of determining the proportion of funding that should be devoted to CPs, and is the present even split between A and B budgets rational?

8. How well does the present system of identifying and supporting CPs work out between the divisions?

9. How successfully has CPD done its job on CPs? (This question also applies to the other divisions).

10. Should projects similar in nature be concentrated in particular Canadian institutions?

11. To what extent has capacity-building been achieved by CPD projects, especially as it relates to training?

12. Have CPs and CPD established channels of communication between Third World and Canadian researchers, and to what extent?

13. To what degree has CPD been able to sensitize Canadian institutions to the need for Third World related research?

With all the responsibilities assigned to CPD, the question then to be asked is whether or not CPD has enough professional and support staff to meet the requirements.

PERCEPTIONS OF COOPERATIVE PROJECTS WITHIN IDRC

Most of the officers of IDRC who expressed their opinions on the idea of cooperative projects supported the concept, though some were much more enthusiastic than others. The idea that advantage could be taken of existing Canadian competence to further the skills of scientists and engineers in Third World countries seemed attractive to many. Several commented on the psychological, as well as practical, benefits of having a counterpart agency, because the researcher in the Third World always has someone with whom he can work out unexpected problems. Several commented that there are occasions when Canadian counterparts are not available or are not as suitable as scientists from other countries and they thought it logical that IDRC should go for the best. However, we note that CPs were accepted by IDRC on the basis of involving Canadian competence. A somewhat different point of view was that CPs should be spread amongst Canadian institutions, not necessarily those that have the most competence or capacity.

Nearly all those interviewed felt that Canadian competence, especially in certain fields, was more relevant to the needs of LDCs than institutions of many other nations. Canadians are especially competent in areas dealing with sciences that relate to the earth - e.g. agriculture, hydro-geology, remote sensing, etc. The capacity to provide Canadian competence was therefore felt to be a contribution that few nations could duplicate. Canadians were thought also to have special competence in communications and information sciences, and obviously the Centre has had great success with health sciences. Social sciences are a special problem in any country, because they deal much less with "hard" sciences that can be expressed by equations or concepts accepted by all. Nevertheless SS inputs are essential for the solution of many problems.

There were several criticisms about CPs within the Centre, of which the most common was that projects could be distorted so that Canadian involvement could be built into the proposal, even for institutions that were clearly capable of standing on their own. Others suggested that some Canadian institutions, notably universities, developed a project, sold the idea to the Third World

scientists, who then proposed it to IDRC, whether or not Canadian counterparts were needed. Other Canadians looked on IDRC as a sort of funding agency for their projects in developing countries. A few officers, not directly involved, seemed to feel that the Canadian "recipient" (counterpart) was the beneficiary at the expense of the Third World country. So far as we were able to determine, any attempt to take advantage of the Centre by any of these means was recognized by the Program Officers and the project dropped or appropriately modified. Since one of the aims of the CPs is to take advantage of Canadian competence, we do not see how a Canadian institution can benefit at the expense of the LDCs, although Canadian counterparts will surely benefit from their experience with problems of LDCs. Nevertheless, care must be taken to ensure that IDRC does not, through continuing pressures from Canadian institutions, become a sort of granting agency for Canadian projects overseas.

Several officers commented on the amount of time it takes to prepare a CP. The officers must work not only with the LDC, but must involve the Canadian counterpart as well. This greatly increases the administrative load, and the time and effort it takes to get a project started. Some wondered if the value of the CPs justified this extra attention, but most felt that cooperative activities were well worthwhile. It is clear, however, that CPs do take substantially more of a Program Officer's time than do "regular" projects, a fact that needs to be kept in mind when assigning workloads and in appraising results.

A few officers commented on the great difficulty of dealing with some in the academic community who seemed to feel that it was their right to spend the money as they saw fit, regardless of IDRC objectives. However, IDRC must be in charge and this attitude will be modified over time.

Several officers commented on the fact that the money for CPs came from a separate allocation that could only be spent on CPs. In some years, it was said that IDRC "went to bed" with CP money unspent, while there were still many high priority "regular" projects that could not be funded. We found no evidence to support this allegation. Money was re-allocated as needed during the fiscal year, which is normal practice in the Centre. Most seemed to think that CPs should be looked on as a normal method of supporting research in all divisions - that is,

whether a project was regular or cooperative would depend on particular circumstances - and the money should come from a common budget. It should be noted that "regular" and "cooperative" funds are now merged in the general allocations to IDRC, but cooperative funds must be accounted for separately. Since CP funds were provided as an additional sum for operation, we agree that there be separate accounting.

In spite of the criticisms, it seems clear that the Program Officers and the managers have accepted the concept of CPs and think they are a useful method of carrying out the work of IDRC.

COOPERATIVE PROGRAMS DIVISION

The Divisional Statement contains an excellent account of the history of how the Division came into being and the work that it has prosecuted so far. A summary comment of the Divisional Statement is included as Annex II, but we think that the section on "background and history" is itself well worth looking at. It is also worth emphasizing that the Statement throughout refers to the need for, and its committment to, interdivisional collaboration. This is especially emphasized on page 40 of the Statement. Although this was presented to us as an interim statement, we understand that it is substantively final and that the only changes in it will be largely editorial.

This Division has been specifically charged with developing cooperative projects, but only in areas not covered by the regular divisions. Its budget has come from a special allocation that is provided to IDRC over and above the "regular" grant and is divided into two parts roughly equal in amount. Part "A" is divided amongst the regular divisions for their use in establishing CPs; part "B" is for the use of CPD. However, in order to ensure that the CPs supported in other divisions meet Centre requirements, the Director of CPD has signing authority for such projects jointly with the other directors concerned. Thus, the Director of CPD not only is responsible for his Division with its emphasis on new types of projects, but also has an important monitoring role to ensure that all CPs meet Centre standards. It must be emphasized that the Director of CPD is not expected to comment on the merits of the projects from other divisions; his authority is limited to ensuring that the methods proposed meet Centre requirements. Nevertheless, there was some direct criticism of this procedure, although one director stated that such monitoring should continue.

The funding for CPD is unusual. Of the money allocated to CPD's budget, about half is re-assigned to other divisions, "A" budget, even though it is still considered part of CPD funds. Thus, there is no alternative to joint signing authority if CPD is responsible for the money allocated to CPs. There seemed to be no fundamental reason for dividing CP money 50-50 except that it sounds equitable and was considered a useful starting point by the Board.

A good many officers of IDRC feel that the portion of CPD's budget assigned to the "regular" divisions should be given in perpetuity and that the amount should increase at the same rate as the funding provided for CPD. Others consider that the money for CPs should become part of the regular budget and not be identified as such, each Division Director being responsible for the number and costs of CPs depending on circumstances. This, of course, would mean the end of CPD as now conceived, and would probably require modification of the rules of procedure for CPs. This matter is discussed in some detail later in the report.

The Divisional Statement expresses the point of view that a cooperative project should require approximately equal inputs from the Third World institution and from the Canadian counterpart. Others question this point of view, on the grounds that in many instances a group in an institution in a Third World country may not require a great deal of assistance in implementing a project but would benefit from having counterparts in a Canadian institution with whom it can work as required. On the other hand, it is easy to imagine CPs where Canadian competence has a major role to play, a role that will gradually diminish with time. This is, in fact, actually happening in some projects. The question of "proportion" may be a non-problem; the only real question would seem to be whether it is equitable - that is, each partner has equal rights in conception, planning, and operation. The relative amounts provided will depend on the project, but as long as equity is maintained the proportion is not significant.

One of the principal duties of CPD is to fund projects in disciplines that are not included in the regular divisions, another form of complementarity. Over the past five years, it has been found that considerable demand is being made for projects in the earth sciences that are of a type not normally covered by the large multinational firms or major national agencies. Thus, the fields of environmental geology and geotechnical engineering, hydrogeology and hydrology, and small scale mining have received considerable support from CPD. These are the sorts of projects that relate to the poor - fresh water, building materials, construction, mineral fertilizers, and the like. There is a good demand for these projects and the "pipeline" is pretty well filled. Thus, it seems entirely reasonable that these kinds of activities would make a good sub-program for IDRC.

Many requests have been received for small scale to medium scale technology at the local level - a sub-program entitled Technology for Local Enterprises (TLEP). Many requests have been received over a broad range of activities. The concept is not new - AFNS has, for many years, been supporting small scale businesses relating to the fields of agriculture, forestry and nutritional sciences. In supporting information systems for use in developing countries, IS has also, in effect, been supporting the development of small scale enterprises. Inevitably, therefore, there has been some disagreement about where CPD projects end and others begin, for example on the production of rock phosphate for fertilizer, some aspects of which have long been supported by AFNS. We feel that these are not important conflicts and should readily be resolved by management. TLEP now seems to cover an extraordinarily broad range of activities. It is pointed out in the Division's statement, however, that the intention is to invite applications from developing countries to determine what their needs are, and then to consolidate TLEP into a fairly narrow range of activities of concern to the LDCs. This is in the mode of operation of IDRC, but we emphasize that the consolidation needs to be made soon if the program is to be managed efficiently.

A detailed study is now being made on the feasibility of extending CPD to a new program tentatively called "Building Industry, Materials and Technologies." In developing countries, low cost housing is essential, so that much needs to be known about building materials and structures suitable for their climate. This will be a most interesting activity, perhaps even an experiment, for CPD points out that it will certainly require inter-divisional co-operation and perhaps, we think, even some amalgamation. Thus, the whole question of suitable structures for people to live in has strong implications for the Social Sciences Division. AFNS is already carrying out projects that relate to building materials, especially in its forestry program. It would seem that IS would be involved in transfer of information concerning the program, especially in the south-south mode. In the conclusion of an extensive report by several consultants, (Afshar et al), it is stated that "IDRC has an especially important role to play in shelter research...it can take the leadership in encouraging research that will not simply provide information to...Third World policy makers...(but)...will be able to play its useful role in shelter research for the benefits of the poor, who are homeless".

The foregoing discussion clearly identifies several problems with respect to CPD - is it properly named, should all these new types of projects be limited to cooperative funding, how should CPD relate to other divisions, should the monitoring of cooperative projects be modified, and how should the "open window" be preserved? These points will all be discussed later in the report where the future of CPD is considered.

The application of rules and directives concerning cooperative programs is difficult to assess, chiefly because there are very few directives and even fewer rules. The principle that Canadian competence must be provided to the appropriate institution in the LDC is obviously crucial, and simple transfer of technology is not permitted. That a collaborative project ideally should be about 50-50 between the Canadian counterpart and the offshore institution is, we feel, an over-simplification. On the one hand, a 50-50 division of labor, of finance, of equipment, or whatever, sounds as if there is a true partnership. On the other hand, the LDC institution is attempting to take advantage of Canadian competence to further its own ends in research and in capacity to do research. One LDC may require very little joint activity, whereas another might be just getting started and need large amounts of support to carry out a project. In both cases, each partner has "equity" in the project - each partner contributes to a goal agreed upon jointly, and each partner has equal opportunity to participate in the formulation of objectives and procedures. If this concept of equity is used as the basis for collaborative projects, then the proportion contributed by each partner may not be significant; each project should be judged on its own needs for its own optimum collaboration. The examination made by a consultant for CPD, showed that proportionate inputs range from about 35% to 65% for most projects, but several went as high as 80 for one partner. This seems to us perfectly normal. Moveover, we must not lose sight of the UNCSTD recommendation that the institutions from industrialized countries should provide their expertise to enhance capacity in LDCs and to support activities in, and for, the LDCs. The provision of Canadian competence means that in some respects at least the Canadian counterpart is a "resource". This inevitably means that it will not only be carrying out joint research but that the Canadian counterpart must be available for help and advice when needed. We have found that many developing countries consider such help and advice to be of great importance.

Some questions have been raised on the distribution of projects in Canadian institutions, keeping in mind that CPD can support projects only by using counterparts in Canada. Current fiscal restraints make it difficult for Government departments and agencies to work on problems of LDCs. If the individual(s) can be spared to work on foreign assignments, so the argument goes, the individual(s) are not really essential to the work of the government agency. The agency then may lose person-years. This attitude throws more load on universities, few of which have broad experience in problems of LDCs. Should those few be the sole supply of university counterparts? Or should the projects be spread around using less experienced centres? If one refers to competence, and the need to improve awareness in Canada of LDC problems, we believe that projects should be spread as widely as practicable. Competence and expertise are different concepts.

The nature, quality and modes of collaborative relationships between Canadian counterparts and developing country recipients vary depending on the degree of need of the LDCs and on the way that national counterparts deal with them. The people from the LDCs seem to welcome the fact that they have Canadian counterparts with whom they are entitled to discuss their problems. They welcome, for example, the opportunity to work on new equipment in Canada before it is transferred to their home country; they welcome the opportunity to work in the labs or offices with the specialized counterpart; and they seem especially to welcome the support given by having scientists from cooperating institutions visit them in their laboratories. Several Canadian cooperants have commented on the fact that it would be better if they spent more time in the LDC, a point raised more often and more emphatically by the LDCs. It is not clear whether the co-operants did not have the time or whether IDRC did not supply sufficient funding to have them spend more time on the project. But it is clear that more attention should be paid, wherever possible, to on-site collaboration, especially for training in procedures.

In one instance, the Canadian counterparts tended to dominate the people from the LDC. If the Canadians had read IDRC's pamphlet on CPs, the meaning had not registered. Counterparts for some other projects commented that, while the relationship with the LDC team was good, they felt that the

superiors of the LDC team might not be as enthusiastic about the project as were the researchers. Nevertheless, competence is being built in the LDC. Almost without exception, people from the LDCs express great appreciation for the training, assistance, advice and cooperation that they received from Canadian counterparts, although many would have appreciated longer associations. In some cases, the shortness of time was caused by Government counterparts who were constrained by current national problems.

To some extent technical assistance has become part of all attempts to provide help to LDCs, and so it is with the CPs. This is especially true of projects involving Information Sciences, where a service is normally being provided. However, even in these instances the process or technique must be experimentally tested under the conditions found in the recipient institution. With few exceptions, the technical assistance is probably relatively small in relation to the overall needs, and as time goes on the technical assistance side will become less and less and the research assistance more. Nevertheless, transfer of know-how and of technology, adapted to new conditions, is a legitimate part of the collaborative process.

In our review of projects, both of these handled by CPD and those by other divisions, we were much impressed with the fact that there were no failures. Some were more successful than others, but the 36 projects that were examined, we think, reflect great credit on the way the project officers have managed the projects to ensure such a high degree of satisfaction. The managers in all divisions, but especially those of CPD who were moving into uncharted waters, are to be congratulated.

There seems to be no basis of need in the Board's decision that the CP budget should be divided into two equal amounts, with 50% to regular divisions (A budget) and 50% to CPD. Probably it seemed to be an equitable starting proportion. The division of the A budget amongst the regular divisions seems to be proportional to their "regular" budget. A hard look needs to be given to the allocation of CP funds. As it now stands, CPD can provide funds only if there is a Canadian counterpart and can deal only with those projects that do not transgress the responsibilities of other divisions. This question will be discussed later in the report.

Cooperation with other divisions leaves something to be desired. Some officers of the other divisions seem to think that CPD is treading on their territory, others seem to think that CPD Program Officers do not have enough expertise in the fields they have to cover and therefore cannot judge the merit of a proposal. Divisions appear to feel they are pretty much a law unto themselves. Thus, there is bound to be some reserve when another division, in this case CPD, has theoretical over-riding authority on any aspect of some of its projects, especially when CPD is not seen to have competence in their fields. When asked how much cooperation there was between divisions other than CPD, the most common response from the program officer was that he/she had too much work in completing assignments in the home division without going outside on cooperative projects that take much longer to implement. Others said that cooperation or inter-division projects was essential, and that people should be thinking of the Centre, not of their division. Clearly cooperation and collaboration within the Centre is vital, and we are pleased to note that a serious effort to improve cooperation is now having increasing success.

The CPD has now identified two program areas for IDRC to support and on which the CPD could concentrate. The areas chosen, as described earlier, have a good deal of merit. The Earth Sciences program is the most advanced and clearly meets important needs. The Technology for Local Enterprises Program is also important but priority areas need to be identified within it, priorities that must be established both on LDC needs and on available Canadian competence.

CPD has recently identified another program for cooperation under the heading of "Building Industry, Materials and Technologies". We understand that this title is intended to cover those aspects of "Shelter Research" not already being supported by the Centre. A special report on Shelter concludes that IDRC has an especially important role to play by continuing to offer substantial research support relatively free of the imperatives of implementing agencies. It can take the leadership in encouraging research and points out that such research can make an important contribution for the benefit of all poor people, but especially the homeless.

It is interesting to note in the report, that for fiscal years 1980 to 1985, the proportion of funds received by the different divisions for shelter-related research, ranged from 47% in Health Sciences, to 14% in Cooperative Programs. Thus, somewhat more than 20% of IDRC operational funds has been spent on shelter. To consolidate the shelter programs from five different divisions will be an interesting experiment. The consolidation should result in an improved program and one that is better identified by the people who need it. It should be noted that this new program is already pretty well funded, but does require supplementary financial support for CPD.

EVALUATION OF PAST CPD ACTIVITIES

CPD activities relate directly to the intent of the UNCSTD Conference in Vienna in 1979. Canadian expertise is being used to assist institutions in developing countries to improve their capacities to help their own countries. The projects have been received almost entirely from the developing countries. The few exceptions relate to those that were stimulated by officers of IDRC knowing of the availability of some special knowledge that would help a developing country and getting two institutions together. Since the requests are coming from developing countries, it is clear that they reflect the needs of the countries concerned. Hence, we are satisfied that CPD is fulfilling a need and that the co-operative projects in other divisions support the conclusion.

The program priorities within the division are satisfactory to us. From the point of view of competence, earth sciences is something that Canadians are good at. The developing countries need help in technology for local enterprises, although we hope that CPD can soon identify the types of projects it will concentrate on. According to the consultants' report, help is needed in shelter research to meet Third World requirements. This possible program is some distance from realization, and obviously cannot be evaluated.

Clearly, there has to be some sort of program concentration. A Program Officer in any division cannot continue to be a front line expert while trying to manage programs, but he/she should not be expected to cover all fields. Program Officers need to generalise, especially in CPD, but should be expected to be familiar with a moderate range of project types. Unless there is some concentration, IDRC will not be able to focus much at all. It is well to recall that Unesco and the U.N. system as a whole have been criticized for trying to be too many things to too many people.

CPDs should fit in admirably with regional needs provided that flexibility is allowed for the proportion of effort to be provided by the Canadian counterpart and the LDC. Some projects with the International Centre for Agricultural Research in Dry Areas (ICARDA), for example, have been reported on favorably in spite of the fact that as much as 90% of the research has

been conducted in Canadian laboratories. Also, CPs have another sort of flexibility. Several institutions in developing countries can work on the same collaborative project with one or more Canadian counterpart institutions. Similarly, one institution in a developing country could have links with several institutions in Canada. In fact, there is no valid reason why there could not be co-operative projects involving not only Canadian counterparts, but foreign counterparts as well, as is now being realized in at least two instances (Projects no. 9, 25, Annex III).

Cooperation within IDRC has been commented on in an earlier paragraph. Certainly there should be no conflict between the different divisions and CPD. CPD is expected to deal with topics that are not within the purview of existing divisions. Therefore the complementarity should be complete.

Theoretically at least all parts of the Canadian community ought to be counterpart agencies. In fact, most of them are universities although several are from government agencies. Given the trend of development in the LDCs where government agencies are usually directly involved, Canadian government agencies are probably the most acceptable to the LDC. In many circumstances, industrial counterparts seem less likely to be successful than government agencies or universities. The LDCs usually prefer as counterpart an institution with people who can work with them as needed. Industrial agencies are rarely geared to do this. A consulting firm is apt to assign one particular individual to the project so that it is a one-to-one relationship in terms of people rather than in terms of an institution. Nevertheless, the LDCs would help themselves if they could work better with successful industrial organizations, especially in reasonably well established areas.

The main problem with many universities is the belief in research for its own sake and that the researcher himself is the best person to select what kind of research should be done. Research for the sake of research is a luxury that few developing countries can afford and we think IDRC was wise to emphasize applied science and engineering, and to insist that this be a guide for any cooperative project.

It would seem that the allocation of CPD funds to explore for new research activities in other fields worked out well. Even in hindsight it is difficult to quarrel with the results. However, as it stands now, every division would like to have more money for cooperative projects, providing of course it does not come out of its regular budget.

EXPLORATION OF FUTURE PROGRAM AREAS

CPD has already identified several areas where the Centre has the potential to support LDCs. Perhaps this is a good place for it to stop. The addition of another division with responsibilities in earth sciences, technology for local enterprise, and shelter research, has added several arrows to the Centre's quiver. Without more money and staff, it cannot get involved in more types of projects.

Although the "open window" is not intended to produce new project areas, it does produce interesting and important research projects. They are often referred to, or listed under, "other fields". Original and innovative projects should be supported even if they do not fit into the regular divisions or cooperative division. CPD is the agent that, at present, keeps the window open and it seems to have done this with a fair degree of success. The Centre, however, needs to be cautious about establishing so many "regular" priorities that it absorbs the limited amount of funds and thereby closes the window.

The Board of Governors has decided that Earth Sciences, and Technology for Local Enterprise, are to be Centre activities, and in due time they will receive a proposal concerning shelter. The principal criteria, of course, are the need of LDCs and the Centre's resources to support them; the LDCs define the need, the Centre defines the areas to support. Clearly the Centre cannot extend its net too widely, keeping in mind the amount of money it has available in comparison to need. It must concentrate not only on specific disciplines, but also on particular parts of those disciplines. We consider that enough is enough and no new areas should be sought for the next several years.

Over the long term, it is expected that the total sum of money available for IDRC will come closer to that recommended by ODA, but current restrictions on money suggest that the goal will be realized substantially later than was thought. Nevertheless, one can expect a substantial increase over time. According to the original intentions, CPs were expected to increase at a rate faster than the regular programs. If the demand for CPs increases at the rate it

has done in the last two or three years, support for CPs will require taking money from regular funds. Similarly, CPD's "regular" funds, may take away from the CPs. As a committee, and keeping in mind the UNCSTD resolutions and Canada's positive response to them, we feel that the committment to the CPs must continue. This is reinforced by the affirmative responses obtained from recipient institutions. Thus, on balance, we would favor greater increases for collaborative funding than for regular. Cooperative funds comprise about 15% of IDRC's operational budget and we think they ought to increase at least to 20%, or perhaps to one-quarter of the total budget in the next few years. This amount could be augmented by regular funds being used to support cooperative projects within regular divisions, as has been done, for example, in AFNS. It is our impression that, as CPs become wider known in the Third World, there will be much more demand for them. It does not seem advisable to us to disappoint expectations that have already been raised, especially as all divisions have had good success in developing CPs.

CPD was established to explore for new programs that might be supported within the Centre, as well as to look for cooperative projects as a new method of carrying out the Centre's responsibilities. We think that both tasks have been successfully completed. Building Industry, Materials and Technologies as a new program, plus the Earth Sciences and Technology for Local Enterprise are substantial increased responsibilities. Thus, CPD ought to be re-examined to determine whether or not it should evolve over the medium term into a different kind of a division. One possibility is to leave it as it is, but provide it with regular funds in increasing amounts over time. It would have the same responsibilities for overseeing the structural suitability of cooperative programs throughout the Centre, would be responsible for the "open window", but in other respects, would be like a regular division. This means that it becomes a division as any other division in the house, but with more responsibilities than other divisions. We think that one division that is more equal than others will lead to difficulties.

A more attractive procedure is to establish CPD as a division with increasing amounts of regular funds over time, its activities restricted to the two or three new program areas that have so far been identified. We feel that there is no need to explore further for other programs, at least not for several years, so that responsiblity would no longer exist. If it is made into a regular division, it

needs a new name to indicate the kind of activity it supports. The Division statement suggests "Physical and Engineering Sciences", which seems to us to be a reasonable proposal, although "Earth and Engineering Sciences" is probably more indicative of activities supported.

If CPD becomes a regular division, how should the Centre ensure that CPs are monitored so that moneys allocated for them are spent for that purpose and that the projects meet Centre standards? This will be necessary as long as a separate accounting is required for cooperative projects that are funded from an allocation designated for CPs. We consider that the Vice-President, Collaborative and Information Programs, could assume the responsibility and authority for ensuring that Centre standards are met.

The "open window", however, is a different problem. Several officers suggested that each division could assume responsibilities for keeping the window open. We understand that the Centre now has a reserve precisely for this purpose and that the President's Committee will scrutinize proposals that come in. We feel this is an important step.

Some 70 projects on energy problems have been received, as described in the Divisional Statement, but only one has been acted on. Although these requests were stimulated by the energy "crisis" of a few years ago, and no doubt many were hastily prepared, we believe that CPD should prepare for a new influx. Energy needs will re-appear in the future and it might be wise to have some guidelines prepared for energy projects. Perhaps they could be part of Shelter Research and of TLEP.

It is too soon to judge how effective the CPs have been in building scientific and engineering capacities in LDCs, though clearly several have been successful and many others are likely to be. The responses from scientists in developing countries (see Annex III, for example, project nos. 5, 6, 7, 11, 13, 18, 26) show good evidence of local capacity building.

STRATEGIC INTENTIONS

The research needs and opportunities identified by the division for its future plans have really been identified by the developing countries. Their requests for cooperative projects and the backing of Canadian counterparts have been the guidelines in the development of the program and its priorities. In the first instance, it was known that the new division was interested in providing assistance in the field of earth sciences, one of the areas where it was possible to develop resources that could help out the foreign exchange problems of many countries and provide work for the people there. There was little purpose in getting into some of the more expensive time-consuming operations that are normally funded by multinational corporations or by major national institutions, so the smaller scale type of activity was deliberately chosen for support. Not only would these be manageable by IDRC in terms of funding, but they also dealt with the problems of the poor, the kind of activity that was not of particular interest to the major international or national institutions.

Technology for local enterprise gradually developed later, based on the kinds of requests that were received at the Centre, although no doubt, many of them were stimulated by Centre officers in the course of their visits to various countries. This program is still in the process of orientation. For the present, proposals are examined on their own merits without any attempt to constrain them to particular fields of action. Thus, their projects range from arc welding to the use of fly-ash in cement, to the production of dyes from insects as a cottage industry, to the use of blast furnace exhaust gases to upgrade lignite and other lower grade coals. Obviously, this is a shot gun approach, but it is expected over a year or two that it will be possible to identify particular areas for support. For the present, the very general priorities are product and process improvement and innovation; management of technological change; and environmental concerns related to local enterprise, all of which are important to LDC's. Clearly also, social sciences are much concerned with management of technological change and of environmental concerns, which will require in-house collaboration. We again emphasize the need to focus TLEP as soon as possible; it must not try to be too many things to too many people.

The proposed program of research on shelter has been clearly identified as an important area and one in which IDRC can make significant contributions of a type different from other aid agencies. As mentioned earlier in this text, the development of this program will be an interesting experiment. Up to the present the Cooperative Division has depended solely on cooperative funds. Although this procedure will change on April 1, 1987, the allocation of regular funds for the first year will be small ($500,000), and is based on CPD's existing activities. It will do little to start new activities on "shelter". We wonder about the substantial support for "shelter" already provided by the other divisions, all or nearly all of which, is from regular funds. It would seem that some means must be found to amalgamate, or co-ordinate, the various activities, and that CPD should not be limited to co-operative funds for "shelter". In any case, the successful prosecution of a major program on Shelter will depend on close cooperation between existing divisions, a point emphasized in the Division statement of CPD.

The priorities for CPD in the short to medium term will remain much as they have just been outlined. We feel that the division has enough on its agenda for the next few years and that the projects should be consolidated, focused and developed. The actual priorities in these fields, once the sub-programs have stabilized, will depend on the attitude of the Third World for cooperative and regular research backing. Of course, the capacity of IDRC to provide this support will be limited and force some sharp constraints on funding for the future. For the next three to five years, however, we think that the division should continue on its present course. All researchers from developing countries who were interviewed by any of us, gave high marks to the cooperative approach and felt that their capacities for better research had been improved, good evidence that CPs are a realistic mode of research support in the Third World.

The potential for growth of CPs within the Centre includes the total allocation of funds for CPs whether or not they are part of the CPD or of the other divisions. Provided that reasonable latitude is allowed in determining what constitutes a cooperative program, the potential for growth is high. However, what percentage of Centre resources should be devoted to cooperative projects seems to us to be the wrong question. It is clear that cooperative projects have been extraordinarily well received by the Third World. Canadian experience and

knowledge are highly regarded in all the fields supported by the Centre. As a result, the number of CPs proposed and the value of them have increased dramatically, no doubt in part because it was expected that CPs would increase in funding at a rate higher than the rest of IDRC. Given the experience with CPs and the general approval of the philosphy of CPs, a higher proportion of funds could be assigned to meet the needs expressed by the G-77 at the UNCSTD Conference. IDRC's input to the total need is inevitably small, but the Centre has shown the way and will be able to use CPs as an important means of carrying out its response to Third World needs. We think, therefore, that no attempt should be made to put an upper limit on the proportion of IDRC's money that should be spent on CPs. We think the demand will increase rather briskly and we suggest that whether or not a project is funded from the CP portion of the budget or from the regular program will depend on the nature of the project itself. We do think, however, that the Centre should plan to increase the present 15% allocated to CPs to as much as 25%. All projects, whether CP or regular, should be judged on their merits.

We understand that at least one division has proposed CPs in its regular budget for fiscal 87/88. Thus, some cooperative projects may come from regular funds and be in addition to the normal cooperative funds. We believe the principle to be sound and should be encouraged. It further reinforces the acceptability of cooperative projects as a way for IDRC to achieve its goals.

We have learned that other funds have been attracted to a CP in at least one instance. In this case the Centre is financially responsible for the part of the project that involves the LDC, whereas a Canadian granting council is supporting the Canadian ~~counterpoint~~ counterpart. This is a type-example that we hope can become one standard way of operating.

We consider the present application of the collaborative project concept to be an excellent means of meeting the needs articulated by the G-77. This is clearly shown as mentioned earlier by the expressions of approval received from so many Third World scientists. There have been some projects that more successful than others, but we know of none that could be classed as failures. This is a remarkable situation and one that reflects great credit on all the officers in the Centre, but especially the CPD group, who had to start with a blank sheet of

projects. There have been complaints about the length of time it takes to develop a project from the time the proposal is received until someone appears on the job. However, co-operative projects inevitably will take more time because more people are involved. This will be especially true when more than one division in the Centre participates in joint collaborative projects. Thus, one of the constraints on collaborative projects is that fewer can be developed with the same number of staff than can manage regular projects.

We strongly support the needs for new personnel as described in the Divisional Statement. The Regional Officers are essential for effective development of CPs and others are needed in headquarters. We have noted in several places that cooperative projects take more time of each staff member and we have noted that we think the number of cooperative projects is likely to increase substantially in the next few years, both in the existing CPD and in other divisions. Also, the Divisional Statement clearly notes that increased collaboration within the Centre will be mandatory for "shelter research" and perhaps for other programmes.

It has not been the practise of IDRC to follow up after a project is nominally completed. A project usually has a finite time of one to three years, not counting successive phases, and the Panel feels that subsequent "contact" trips should be included in many projects. These will, of course, cost additional money and take more time of busy staff, but will often ensure the successful continuation of the project. The fact that a counterpart from an industrialized country will visit the LDC institution is a useful stimulus for research. It also tends to maintain the image of the recipient institution in the eyes of the senior administration, and support is not so likely to drop in favour of the newest star. We suggest that CP's are the logical projects to test this procedure. Annual visits of 10 days to 3 weeks could be considered for 3 years following the nominal end of the project, with the Canadian counterpart institution providing the follow-up. In addition to stimulating activities in the LDC, such follow-up would ensure continued cooperation between the institutions, and keep Canadians involved in Third World research efforts.

RECOMMENDATIONS

1. That IDRC accept cooperative projects as one normal method of fulfilling its objectives for all divisions.

2. That cooperative projects continue to be funded by divisions from their regular budgets whenever appropriate.

3. That IDRC accept the sub-programs in Earth Sciences and Technology for Local Enterprises as Centre activities.

4. That the proposed program on Shelter Research be approved as an overall activity of the Centre as soon as practicable with the sub-program on Building Industry, Materials and Technology being an integral part of it.

5. That CPD be provided with regular funds on a continuing and increasing basis for the operation of the above programs, as has been initiated for 1987-88.

6. That CPD be re-named in order to reflect better its responsibilities in the Centre.

7. That CPD be relieved of its responsibility for monitoring the standards of co-operative programs in IDRC.

8. That CPD be relieved of the responsibility for the Centre's "open window".

9. That CPD sharpen the focus of its activities so that it can concentrate its efforts and skills on a more limited range of projects.

10. That the responsibility for both the "open window" and monitoring of standards be transferred to the Vice-President, Collaborative and Information Programs.

11. That cooperative projects be allowed to develop as needed by Third World institutions, keeping in mind the principle of equity between collaborating institutions.

12. That CPD officers be obtained as soon as practicable for regional offices not yet having them.

13. That project-related training be augmented, with increased involvement from FAD.

14. That Canadian counterparts be encouraged to do as much as practicable of the research on the site of the LDC institution.

ANNEX I

TERMS OF REFERENCE

IDRC BOARD REVIEW PANEL - CO-OP

PURPOSE OF THE REVIEW

To review the division's mandate, past and present performance, and strategic intentions and to comment on the effectiveness of the divison's activities in fulfilling the Centre's mandate and objectives.

SCOPE OF THE REVIEW

The Review Panel is requested to give particular attention to the following:

I. The Mandate of the Division

Taking into account the historical antecedents to the creation of the division and its growth over the past four years, review of the current operating mandate of the division and the policies in place to support the fulfillment of this mandate.

II. The Past and Present Performance of the Division

(a) Assess the division's program development, delivery and management, with reference to:

(i) assigning priorities to different program activities;

(ii) application of the rules and directives governing Cooperative Programs activities, both by the division itself and by other divisions;

(iii) the nature, quality and modes of collaborative relationships between Canadian and developing country recipients;

(iv) the degree to which technical assistance has become part of the collaborative process;

(v) the appropriateness of the A-B budget and the proportional allocation of funds to each segment;

(vi) coordination with other divisions;

(vii) the identification of new program areas for concentration.

(b) Evaluate the past program activities of the division and its current situation with reference to:

(i) the relevance of the division's activities to the needs of Third World countries and to the intentions of the UNCSTD Conference, Vienna, 1979, to which the creation of the program was a response;

(ii) the program priorities within the division and the potential for growth in each of the current programs;

(iii) the relative merits of supporting a broad range of activities versus program concentration in a limited number of fields;

(iv) the appropriateness of the Cooperative Programs to the various regional needs;

(v) inter-sectoral and inter-divisional cooperation and the complementarity of the division's activities with those of the rest of the Centre;

(vi) the different categories of Canadian recipients and the relative contributions and problems encountered with each;

(vii) the proportion of divisional funds allocated to established programs and to exploring new research activities in other fields.

III. Strategic Intentions

(a) Review the research needs and opportunities identified by the division as guiding its strategic plans.

(b) Review the future priorities assigned by the division to its different programs in reference to the research interests and capacity-building needs of the Third World.

(c) Assess the potential for growth of the division within the Centre, in particular the percentage of Centre resources which should be devoted to cooperative projects.

(d) Assess the adequacy of IDRC's current application of the collaborative project concept in meeting the needs articulated by G77 at the UNCSTD Conference.

IV. Exploration of Future Program Areas

Comment on the division's role in investigating new areas of potential Centre support with reference to:

(a) the mechanisms and resources to carry out this exploration;

(b) criteria to determine whether new areas become and remain Centre programs;

(c) long-term implications for both regular and collaborative program funding;

(d) institutional options for exploring and evolving new programs within the Centre.

V. Recommendations

(a) Provide comments on the division's mandate and suggest modifications, as appropriate, to improve the division's responsiveness to collaborative research needs of Third World researchers.

(b) Comment on the program areas that the division currently funds and suggst changes as necessary.

(c) Comment on any constraints which might impede the division in fulfilling its mandate and suggest, if necessary, any major management issues which impinge on the effectiveness of the division's activities in the fulfillment of Centre objectives.

(d) Comment on the appropriateness of the collaborative project as a means for Canadian scientists and technologists to respond to Third World needs and research priorities.

(e) Comment on the division's mandate and role within the Centre with regard to the exploration of new fields of research and the funding of non-collaborative research proposals which fall within the division's established program areas.

SOURCES OF INFORMATION FOR REVIEW PANEL

(a) Final audit report on Cooperative Programs Division, September 1985.

(b) Divisional statement prepared by the division.

(c) Consultancy studies to be funded.

(d) Division files and program staff interviews.

(e) Past briefs written by divisional staff.

(f) Past evaluations and Project Completion Reports.

ANNEX II

CP DIVISIONAL STATEMENT
January 16, 1987

This is entitled the second draft of the Divisional Statement, but we must assume that the final draft will not differ in substance from the present statement.

We found the summary of the evolution of CPD to be of considerable interest (pp. 1-5). The conditions under which IDRC assumed the obligations Canada had pledged at the UNCSTD Meeting are clearly defined, and it is stated that the new undertaking should be kept separate from the regular activity of the Centre; and that it must be financed in addition to the regular programme. It is also noted that the new undertaking would try to find new fields of research for support by IDRC.

Then follows a brief review of the various sub-programs now being sponsored by CPD in the fields of Earth Sciences and Technology for Local Enterprises. In this rather extensive summary of past, present and future activities, the following statement is made (p. 30): "successful research collaboration can best be achieved by linking compatible partners of relatively equal strength. A master craftsman and an apprentice type of relationship cannot in any way fulfill the program's mandate". The Panel does not agree with this statement. Part of the needs expressed at UNCSTD were for the development of scientific research capacity in developing countries and for which purpose the industrialized countries were to provide their expertise. Thus, there can rarely be "relatively equal strength". We consider that the main objective is to upgrade and improve the capacities of the LDCs. The responses we received from partners in developing countries, show clearly, that the work has been greatly strengthened with the support of the Canadian counterparts.

We are somewhat uneasy about the fact that, in the management for technological change (p. 34), no mention is made of the Social Sciences Division.

The program now to be developed has been entitled in this report "Building Industry, Materials and Technologies Program". We feel that the discussion of this potential program (pp. 37-40) and its strong committment to interdivisional and interdisciplinary coordination and cooperation, is a good sign for the future. The Division proposes that the area of "shelter be identified by IDRC as one of the developmental themes of the Centre". This seems to us to be an excellent suggestion.

A very good summary of financial resources is given (pp. 43-53) where we note that the President's Committee determines the share of cooperative programs funding to be divided between segments A and B, and to decide on the division of funds between each Division.

When discussing Human Resources (pp. 54-58), we note that the two extra positions needed for regional office staff will be re-assigned from the Ottawa-based staff. In other words, no increase in staff is contemplated. We also noted that the workload in dollars per program officer is roughly $1 million, which is more than the Centre's average workload. It is also noted that cooperative projects take longer to develop and monitor than regular program projects. Thus, we feel that the CPD is too optimistic in the amount of work it can do with the existing staff, no matter how distributed.

The requests for projects over the years show an interesting anomaly, in that some 68 requests for topics on energy were received, but only one was supported. The explanation given for this is that the energy crisis of a few years ago spawned a very large number of hasty projects - what CPD refers to as the "band wagon". CPD was not equipped to respond and indeed felt that most of the projects did not merit a positive response. Nevertheless, we suggest for the future that energy projects ought to be looked at carefully and should be stimulated perhaps under the TLEP and under "Shelter Research". Although the crisis has subsided, it is inevitable that there will be strong pressures forthcoming for energy research in the fairly near future.

The analysis of the distribution of projects received from, and allocated to, the various institutions is most interesting (pp. 66-83). We note, however, that the discussion begins with a heading entitled "Canadian Recipients". We urge that the term "recipient" be dropped in connection with Canadian institutions and that the term "counterpart" be used. Canadians are providing support, not receiving it. The general conclusion that can be drawn from all this is that the Canadian universities are much more involved than government and industry combined, with nearly 80% of Canadian counterparts being at universities. It is noted that the number of proposals from developing countries is rising steadily. It is also noted that the largest proportion of projects are directed towards the Latin American region and that the African region gets the smallest proportion. This is not surprising for the Latin American region is the most advanced in science and technology, and therefore can identify new projects to build on their own strengths. It is noted by the Division that it will need to stimulate more projects from the African regions. Since the level of development is lower there, undoubtedly this means that more input will be required from the Canadian partner than for, say, Latin America. Middle East projects also need to be encouraged.

We note that the cooperative programs' approach to training is to involve more the FAD and we approve this point of view. We agree that the training activities should be limited to those within approved projects and for developing country nationals. We are not altogether in agreement with the emphasis on support for informal types of training (p. 88). We presume, however, that this informal support would come from CP funds and that formal training has been considered as the responsibility of FAD, whether project-related or program-related. Nevertheless, we feel that CPD would be wise to encourage degree training related to CPD projects, since one of the principal aims of the projects is to increase the research competence in the developing countries. On page 89, paragraph vi, it is stated that project-related awards to be financed by FAD "will also be considered". We suggest that the awards should be encouraged where appropriate.

We note the second paragraph under "strategy" (pp. 90-98), and we approve its emphasis on the fact that interdivisional relationships will have to develop and that the results should improve the efficiency in the use of the financial resources of IDRC. We also approve the general aims for the future - consolidation, refinement and focus are those that are strongly supported by this Committee.

It is to be noted that the criticisms of the Divisional Statement are mostly minor, with one major exception. We do not consider that equity in projects necessarily means equality. Projects should be judged on their merit. UNCSTD had a principal objective: the involvement of industrialized country expertise in problem-solving of the developing countries in order to improve their capacity to carry out scientific investigations. Such being the case, equality is an elusive concept; equity is clear.

ANNEX III

REVIEW OF PARTICULAR COOPERATIVE PROJECTS

Several cooperative projects have been selected as reasonably representative of the scope of activities supported by IDRC. They include those that were examined by Prof. Butros, Prof. McGinnis, Prof. Hamelin, Dr. J.A. Ramirez and Dr. J.M. Harrison, consultant to the Panel. Ramirez was engaged by CPD to review selected projects in Latin America and the Caribbean. Altogether, 36 projects from institutions in 20 different countries have been examined, many by more than one of us.

Each project is summarized and the summary includes comments made by those who appraised the project.

INDEX OF PROJECTS

1. Flyash Concrete (Argentina/Dept. EMR)
Project No. 3-P-84-1030, CP
Project Officer: S. Fahmy

The main objective of the project is to evaluate the suitability of Argentinian flyash as a partial substitute in portland cement used in the construction industry, and to prepare guidelines for the utilisation of flyash in Argentina's building industry.

The project originated with the Argentinians who proposed that CANMET (Canada Centre for Mineral and Energy Technology) be the co-operating agency. CANMET people are well known in Latin America for their work on cement and IDRC worked out details of the project with CANMET. Flyash is a common ingredient in certain cement materials and it is hoped that two Latin American trainees will be able to modify existing procedures as a result of their training in CANMET. CANMET officers think the project is good but fear that it will not be high priority for senior officials in Argentina. The Project Summary, however, states that all support is promised. Two trainees have returned to Argentina after four months in Canada.

In a short interview, the one trainee expressed confidence that the project will be supported when she returns to Argentina, but until the researchers have more knowledge of the problems of flyash in concrete, it will not be possible to tackle the problems in Argentina. Her main concern was that she and her colleagues had the right approach to solving the Argentine problems and was confident of a good result. CANMET commented that she, and her predecessor on the training program, were both good engineers.

2. Strengthening Data Processing at CIMMYT (Mexico/Agriculture Canada)
Project No. 3-P-82-1011, IS/CPD
Project Officer: B. Brown

The second phase of this project has just been completed and the final report is not yet available. The project involves transfer of technology as a system was already in place in Agriculture Canada and on a similar computer. The research involved the development of software appropriate to this international centre's requirements. It ran into difficulties in one respect because, in Phase I, the Agriculture Canada Officer, who went to Mexico to work directly with the Institute, decided to leave Agriculture and is now living in Mexico. Thus, the loss of one good man was not conducive to more unintentional generosity. However, the project so far as CIMMYT is concerned has been successful. National centres in Latin America seem to be much more anxious to develop their own software to meet their own needs, although there is some exchange with CIMMYT. There is a possibility that there will be further extension of the project for one year. This will depend to a large extent on whether or not Agriculture Canada "can spare the time".

3. Microform Storage Experiment (Indonesia/Bank of Canada)
Project No. 3-P-84-1046, IS/CP
Project Officer: R. Archer

This project was initiated by IDRC. Archer knew of the Bank of Canada's activities with respect to small scale storage of microforms. After consideration of possible organizations in the developing world where it might usefully be tried, he approached the Indonesian Research Council (LIPI). LIPI was happy with the opportunity to be part of the project. The prototype packages seem to be doing very well in the high humidity, high temperature regime of Jakarta. It should be a good example for other countries, and probably the packaging should be tried in a hot, dusty region. Archer was complimentary about the conscientious approach of the Bank of Canada, which went out of its way to ensure that the program is well established and the experimental study properly monitored.

4. Cooperative Management (Tanzania/York University)
Project No. 3-P-84-1003, CPD
Project Officer: R. DesRosiers

This seems to have been a rather difficult project, largely because Canadian counterparts tended to impose Canadian points of view and methods on Tanzania. A response to a questionnaire that had been jointly completed by the three Canadian counterparts showed very little evidence that they realized the importance of using their expertise to help the Tanzanians. They seemed to regard the project as a research study for the benefit of their university.

Discussions with the Tanzanians in the presence of the Canadian counterparts were not particularly illuminating regarding possible difficulties. Private discussions held in Tanzania were said to be more forthright. Nevertheless, this project has been continuing for several years, Phase II is nearly completed, and Phase III is being planned. The Tanzanians must have felt they were getting something useful. However, Phase III seems to be a much more practical type of study and the Canadian counterparts may not be the same. On the basis of the response to the questionnaire, a change in direction is probably necessary.

5. Gore-Gambella Geotraverse (Addis Ababa University/Carleton-Ottawa)
Project No. 3-P-83-1002, CPD
Project Officer: R. Vicencio/C. Pride

This three year study is now completed except for the write-up. This was a fairly straight forward geological study in a selected area, where mineral prospects are believed to be good but, more importantly, where geological information having economic implications can be evaluated. The project officer thinks that this is a project that did not achieve its goal. He thought the cooperative arrangement should have been directly with the Geological Survey of Ethiopia. Geotraverse, according to him, has turned out to be too academic and though he thinks

there is good science in it, it is not the type of applied science that CPs should be supporting. The Carleton-Ottawa team, on the other hand, feel that it was a good project; the Geological Survey of Ethiopia supplied more than half of the people trained on the project, and while they did not find and were not looking for mineral deposits, their study revealed major structures of the region and other geological features that can be applied to areas where the Geological Survey of Ethiopia gives higher priority. The GSE conceived the project and the University ran it. A graduate student from Ethiopia praised the project, said it would not have been done without the help of the Canadian team, and that it greatly helped in building up the capacity of people at the University and at the Geological Survey of Ethiopia to carry on with geological activities in the field.

On balance, even though it is not applied research in the sense that is usually meant, it has been a good project with strong economic implications, good capacity building, and a project that would not have been undertaken without cooperative assistance. A more practical Phase II is being discussed.

6. Karst Detection (Malaysia/Dept. EMR)
Project No. 3-P-84-1008, CPD
Project Officer: R. Vicencio

This project grew out of a request to IDRC by the Chairman of the Department of Geology in the University of Malaya. He wanted to know if there were a method that could be used to detect the varied surfaces of karst deposits, and to determine which pinnacles were solid and which were honeycombed. This information was necessary to ensure stable foundations and to select building sites without drilling. Vicencio contacted the Geophysics Division of the Geological Survey of Canada where a project was developed and initiated using multi-channel seismic techniques. It worked in identifying pinnacles, but not so well in determining their solidity. However, other Malaysian institutions who became interested in the technique are now applying it to such problems as appraising coal deposits, and for finding buried stream channels in the karst areas, channels that may contain placer deposits of tin and gold.

The Canadian counterpart considers that the University of Malaya did not benefit as much as it should have. He pointed out that the individual from the University who was sent to Canada for training did not seem to fit in very well with the kind of scheduling that was required. Another individual, from the Geological Survey of Malaysia, entered into the training scheme vigorously and enthusiastically. The counterpart had no information on how the University is using the technique and instrument provided. The Geological Survey on the other hand is using the instrument that was obtained with Canadian help to extend its work, apparently with considerable success.

This project is a success, but not for the reasons for which it began. The Canadian counterpart stated that he had learned a good deal from his participation in the project.

7. Jamaican Bauxite Waste (Jamaica/McGill Univ.)
Project No. 3-P-82-1016, CPD
Project Officer: Aung Gyi

Ever since production of alumina began in Jamaica more than 30 years ago, the control of caustic red muds, a waste product, has been a major problem. Some 7 million tons of alumina are now produced annually, which results in the need to dispose of about 12 or 13 million tons of mud. The muds remain suspended in the water in the dumped areas and the caustic content creates other serious problems. The University of West Indies brought the project to the attention of IDRC and to McGill University and a collaborative project was established to deal with the muds. The project apparently has been successful; the red muds can now be controlled and the Jamaicans have the capacity to keep the project going and to improve on the technology. If there is a follow-up, it will probably concern the rehabilitation of the land and reduction of the bad effects on the groundwater that have resulted from previous disposal practices. Alternatively, or in addition, there could be a study on the use of the dried red muds, e.g. in bricks. The successful outcome of the project was helped by the creation of a "consulting committee" formed by representatives of McGill, University of West Indies, local industry and governmental agencies. The results of the project should have application in several other countries. The final report of the project is now at hand. This can be classified as a successful end to more than 30 years of study, IDRC's essential input coming late in the investigation.

8. Urban Geology (Thailand/McGill Univ.)
Project No. 3-P-84-1044, CPD
Project Officer: R. Vicencio

This project is just nicely getting underway. It grew out of a visit by a group of engineering geologists to Shanghai in 1983 at which Vicencio was present. A senior member of the Asian Institute of Technology was present and realized that the Chinese were on to a couple of methods that enabled them to make much more precise analyses of compaction and groundwater recharge, necessary to prevent subsidence of the land by withdrawing excessive underground waters. The counterpart in Canada is originally from Singapore and one of his graduate students came from Thailand and therefore could read and appraise literature. This is an enormously important project. If successful, it will have application in Shanghai itself, Jakarta and nearly all cities in such delta regions. One of the Canadian counterparts stated that the early results are promising. So also are the results of an analagous study in Mexico.

9. Fiber-Reinforced Roofing (Univ. Addis Ababa/Univ. Ottawa)
Project No. 3-P-84-1045, CPD
Project Officer: S. Fahmy

Fiber used in cement will obviously lighten the load of the roof and simplify building the whole structure. However, using fiber creates many difficulties. The University of Addis Ababa brought the problem to IDRC. The project, as now underway, is unusual, in that the Swedish equivalent to IDRC (SAREC) and the Cement och Betong Institutet (CBT) of Sweden are all involved. Because of CBT's knowledge of this kind of cement, Fahmy

had the whole concept reviewed by CBT. The current program was put together after favorable review and constructive suggestions by the Swedes. The project is rather new but it has the earmarks of becoming an excellent project and if successful, it will have broad ramifications. Unluckily, the Canadian counterpart was persuaded to take early retirement and his replacement has not yet been named. Thus, there is pause in the project advancement.

10. Air pollution (Jordan/Environment Canada)
Project No. 3-P-84-1016, CPD
Project Officer: S. Fahmy

The project was initiated from Jordan, the Jordanians needing to learn what standards were required for monitoring the quality of air. Atmospheric Environment Service was the Canadian counterpart agency. The project appears to be largely a transfer of technology with extensive adaptive investigations. Both the Canadian and Jordanian counterparts regarded the project as successful and useful. The Jordanians, however, felt that they had too little input in determining the counterpart agency and that it took too long to get things started. Even then, there was a minimum of Canadian input. The Canadian counterpart remarked that the most difficult part of the project was getting freed from his Canadian responsibilities. All departments are being pressured to reduce unneeded staff and someone who can be spared for a length of time is apt to be regarded with suspicion by the control agencies.

11. Sperm Inhibition (Chile/Queen's Univ.)
Project No. 3-P-83-1006, HS/CP
Project Officer: K. Smith

This is one of the very first CPs and was approved on June 10, 1978. It is now in Phase III and Phase IV is the winding down of the project. The project was unusual in that it is one of the few major studies on contraception involving the male. In the last few years, more effective ways have been found for male contraception than that undertaken in this project. However, one of the principal objectives of this project was to build up research capacity in the Chilean University and the project was successful in this aspect. It did not achieve the goal intended in male contraception, but the researchers can now move on to other more promising methods.

12. Cytomegalovirus (China/McMaster Univ.)
Project No. 3-P-83-1025, HS/CP
Project Officer: S. Moses

This project is to determine whether or not cytomegalovirus infection is a serious factor in child morbidity and mortality in Chengdu, Sichuan Province, China. If, as was expected, it is found to be a public health problem, the next step will be to try to develop preventive measures. Finally, it will help to build up the expertise in Sichuan Province of China and could have application in other provinces as well. The project was modified from the original, which was designed to reduce cytomegalovirus infections on the assumption that they are prevalent. The more basic start was probably due to the influence of the Canadian

counterpart. Although the project should have finished some months ago, the start was delayed by the inertia of the Chinese bureaucracy. The final report is expected early in 1987.

13. Dry Beans (Chile/Guelph Univ.)
Project No. 3-P-83-1012, AFNS/CP
Project Officer: A. McNaughton

This project began about three years ago and is nearly completed. It was an attempt to determine why beans became so hard during storage and thereby to determine the optimal storage condition and also to provide graduate training. The project originated with the Chileans, who specifically requested association with Guelph University. The study seems to have been effective, based on good collaboration between Guelph and the Chilean University. It is believed that they now understand reasonably well the biochemical principles that cause beans to harden. They believe also they have been able to determine what factors affect the quality of beans while in storage. One graduate student from Chile has been trained in the subject and local training has been provided for technicians and assistants. Nine theses in the field of food technology have been developed under the group's guidance and a specialized food technology group which did not exist before has been established at the University. The project seems to have been successful on all counts. It is now proposed to have a Phase II of this project, which will involve the original two universities plus the University of Manitoba and the Nutrition Institute of Latin America, stationed in Guatemala. Their objective is to turn this theoretical study into practical application.

14. Trade Protectionism and Industrial Adjustment in S.E. Asia
Project No. 3-P-84-1036, SS/CPD
Project Officer: J.C. Fine

This project is jointly sponsored by CPD and SSD, having originated from the Institute of Southeast Asian Studies in Singapore. The project officer considers that parts of the project have been very good and that at the very least participation in the project was a good learning experience. The results of the project will depend on what action is taken in the political milieu, for it is now up to the LDC governments to put the information obtained into use in their own countries. Under protectionism, including non-tarrif barriers, there are both winners and losers. In the LDCs, all the attention is paid to the winners and in Canada, practically all the attention is paid to the losers. It was suggested that a more balanced approach would help both Canada and the LDCs.

15. Root Crop (Ivory Coast/Univ. Montreal)
Project No. 3-P-84-1058, AFNS/CP
Project Officer: Andrew Ker

The project was brought to IDRC by the University of Abidjan. IDRC then looked for competence for assistance in Canada, which was discovered at the University of Montreal. This is pretty high technology, designed to use tissue culture methods for yam propogation. The program has already been extended for about six months and seems to be going well. The people in Ivory Coast are good researchers but Ker wonders how far

the methods will reach out to the farmers who should benefit from the technique. If there is a follow-up to the project, it should be through the Ministry of Agriculture and its extension program.

16. Cooperative Educational Research (Chile/Ont. Inst. for Studies in Education)
Project No. 3-P-84-1004, SS/CPD
Project Officers: D. Morales/S. Schaeffer

This project is an outgrowth of fifteen years of Canadian support for Chilean educational institutions. The Chileans asked for institutional collaboration to give them a broader base to work on. Phase II of this project is now being drafted in Chile, and is needed, but the balance between Chile and Canada will certainly be different with more and more of the initiative being taken by the Chileans. This is considered to be a good project and will benefit the Canadian team as well as the Chileans. Practically all the data come from Chile, and the development of the research competence on major educational problems in Chile is an important factor.

17. Turkish Lignite (Turkey/Univ. Sherbrooke)
Project No. 3-P-84-1031, CPD
Project Officer: S. Fahmy

This project was initiated by the Turks who wished to find an economical way of upgrading lignite so that it can be used in steel-making. This apparently is a follow-on from several discussions with the Turks begun in 1977 or 78. When this project came to IDRC, Energy, Mines and Resources was approached and the people there referred IDRC to University of Sherbrooke which had made a study of lignite under contract to EMR. Sherbrooke has the patents on the process developed by them, which uses pure CO gas as the medium in which the lignite is to be heated. Most moisture is driven off, and a smokeless fuel results. Jointly a project was developed in which exhaust gases from blast furnaces are being used experimentally in what looks to be a very promising method of developing better coal resources in Turkey, where blast furnace gases can be used. Turkish competence is being improved and the outlook for success is believed to be good. Many other LDCs have large lignite deposits so a successful outcome will have broad application.

18. Cairo Metro (Egypt/Univ. Alberta)
Project No. 3-P-84-1026, CPD
Project Officer: R. Vicencio

The proposed Metro goes underground through the city centre. Groundwater control and the risk of ground deformation are serious problems that can be substantially lessened by accurate direct measurement of ground movement and stresses, a method pioneered at the University of Alberta. The project is designed to help the Egyptian engineers attain research capability in the method and to monitor the situation. Training will be on-the-job. In mid 1986, with about six months to go for the project, all seems well. Training has been satisfactory and a new technology for Egypt is being mastered. Graduate studies are being planned on the work of the project and the leader of the Egyptian team has

been asked to prepare training programs for the Egyptian national authority for tunnels. Clearly, a successful project. Some concern was expressed by the Egyptian team at the slowness of payment and especially the embarrassing situation that can develop if the final payment is delayed until the final report is in, as the final report may very well take two or three months.

19. Acute Respiratory Infections (Egypt/McMaster Univ.)
Project No. 3-P-85-1022, HS/CPD
Project Officers: L. Gelman/R. Paradis

This is an attempt to determine the cause of acute respiratory infections in Egyptian infants and to try to work out a rapid diagnostic technology. It should improve research capabilities in the Faculty of Medicine at University of Alexandria and should determine the importance of the suspected agent in infant pneumonia. If successful, this project should have wide-spread application throughout the tropical regions. The Egyptian leader felt that a really first-class project had resulted. He also thought, as did the leader of the Cairo metro project, that the cooperative mode was an excellent way of upgrading research capabilities in the field. He did point out, however, the need for "topping up" professors' salaries as they get no component of their salary for research.

20. Enterprise Performance (Egypt/Concordia Univ.)
Project No. 3-P-81-1009, CPD
Project Officer: Aung Gyi

This project was intended to study the managerial factors that influence the effectiveness and performance of firms in Egypt. It is hoped that this type of management research will raise the quality of management and thereby improve the performance of Egyptian enterprise. In this case, the Canadian counterparts were more in the nature of consultants, although responsible to Concordia University. The project went very well and has been satisfactorally concluded. Some suggestions for improvement included the advantage of a CPD officer being stationed in Cairo at MERO, for training in Canada and on-the-job, and more visits by IDRC staff. Again, the idea of cooperative projects was praised and indeed one of the shortcomings apparently resulted from the fact that there was too little training on-the-job in Canada.

21. Faba Bean Pollination (ICARDA/University of Manitoba)
Project No. 3-P-84-1055, AFNS/CP
Project Officer: G. Hawton

This project builds on existing collaboration between Manitoba and ICARDA. They are to attempt to develop methods for reducing or eliminating out-crossing between field plots through the use of guard rows of crops more attractive to insects, or of chemical insect repellents. It is a new project about half completed. It is expected to have considerable impact throughout the developing world. ICARDA seems reasonably happy with the project and pointed out that Manitoba has the larger share of the work and of the grant, but in this case it is crucial. ICARDA gives some backup once a project is underway in a national institution.

22. Lentil Haploids (ICARDA/University of Manitoba)
Project No. 3-P-84-1042, AFNS/CP
Project Officer: A. McNaughton

This is an attempt to use plant tissue culture methods for the production of better breeding materials. One ICARDA technologist will receive three months training at the University of Manitoba. If the project is successful, breeding procedures, which now require two to three years, will be reduced to a few months. Funding for this project is heavily weighted towards the University of Manitoba, because almost all the scientific work is being done at Winnipeg. If the project is successful, and if Phase II is developed, the situation will be reversed. There was strong support for the cooperative aspect, without which there could have been no project.

23. Lentil News and Information Service (ICARDA/Univ. Saskatchewan)
Project No. 3-P-81-1008, IS/CP
Project Officer: K. Broadbent

The basic aim of this project is to produce a publication that can make results from ICARDA more widely known. Since research is not effective unless the results are dispersed, this is an essential component of research activity. The project seems to have been successful in that the information letter is doing well and it is said that the project would not have been successful without collaboration from the University of Saskatchewan.

24. Microbial Control (Egypt/Ag Canada)
Project No. 3-P-85-1050, AFNS/CP
Project Officer: E. Potts/M. Loevinsohn

This project is to develop the technology for control of microbial pests that infest especially soya beans and ground nuts. Success here may well lead to application elsewhere, and to commercial patents in Egypt that might form the basis for a new industry. An offshoot of this program is that it might provide more effective control of the major pest of canola in Canada. The Canadian counterpart thinks that the collaborative relationship is excellent and that this is the type of project that IDRC could use to play an important role in insect control. IDRC's procedures used in formulating the project were excellent, but he suggests that the Centre's cooperative specialists should make more effort to monitor the project. He also suggests that IDRC should extend its interest in microbial control to forests, where "the world leaders and the application technology are right here". Discussions with the Egyptians brought out the fact that Ag Canada and the International Research Centre of Egypt had prepared a joint proposal. The major input is from the Egyptian side, but IRC was firmly convinced of the importance of the cooperative arrangement since it opened new horizons and provided an opportunity to exchange concepts. The Egyptian leader also mentioned the importance of remuneration for the Egyptian researchers. He mentioned that more emphasis should be placed on joint publications, and suggested that people involved in CPs should have the opportunity to attend conferences related to the project.

25. Genotyping (CIAT, Colombia/Univ. Manitoba)
Project No. 3-P-83-1031, AFNS/CP
Project Officer:

The specific objective is to select the electrophoretic technologies most useful for characterizing germ plasm in the CIAT collections, basically a taxonomic problem. However, the application of recent advances in chemo-taxonomy will allow CIAT to better describe the existing collection. The University of Manitoba consider it to be a good collaborative relationship, that the training of CIAT personnel is going well, and the results should be directly applicable to crop improvement programs in countries where the investigated crops are grown, and suggests that the research capacity-building is at least adequate. Finally, the counterpart suggests that such cooperative activities in IDRC should be expanded. At CIAT itself, it was felt that the training, the cooperation and the achievement of goals were working well. Already two papers have been published in international scientific journals. The improvement at CIAT should benefit all countries who use the data from CIAT. The co-operative aspect was considered to be important and successful.

26. Gas Insulation Systems (Xi'an Jiatong Univ., China/Univ. Manitoba)
Project No. 3-P-84-1037, CP
Project Officer: S. Dubé

This project involves the building of research and development capacities at the Chinese University to enable the researchers to conduct research on gases and gas mixtures that can be used in compressed gas insulated equipment, needed to transport electric power over long distances. The proposed research should lead to the development and manufacture of these systems in China. The principal investigator plus two co-investigators from Xi'an have received training in Canada. To date, several publications have resulted from the research. The research partnership is clear and complementary. Several industrial sponsors participate and they are taking advantage of the research results. Research capacity-building is going well. The only serious critical comment is that the handling of the proposals seems to be very slow, taking up to two years for IDRC to approve or reject a particular proposal.

27. Riverbank Erosion, Bangladesh (Jahangirnagar Univ./Univ. Manitoba)
Project No. 3-P-83-1003, SS/IS/CP
Project Officer: S. Mukerji

Flooding in Bangladesh affects mostly the very poor population and this is an attempt to survey the dimensions and implications of the problem. The project involves engineers, social scientists, university-based researchers, government officials, and requires cooperation between Canadians and Bangladeshis. According to the Canadian counterpart, the potential of the project has been hampered by the ineffectiveness of the JU principal investigator. Nevertheless, four PhDs will have been obtained by Bangladeshis, one MA has been completed and a number of theses are being generated. He suggests that University of Manitoba should have some input in the selecting of trainees. He considers that the project is relevant to other regions, since many of the major rivers of Asia have similar problems. He regards the training and education program has

generally been successful, except for the short courses where too few good researchers were sent. He suggests that English language upgrading is often essential and should be part of the budget. It looks as though it is a project from which we could learn something useful, and which will no doubt in the long term benefit both Jahangirnagar University and University of Manitoba.

28. Metallurgy of Arc Welds (Univ. del Valle, Colombia/Univ. Waterloo)
Project No. 3-P-83-1019, CPD
Project Officer: Aung Gyi

Within its desired industrial expansion and economic diversification, the government of Colombia's most recent five-year plan lists the support of technological progress and metal working sub-sector as one of its top priorities. This project addresses a practical issue and supports the leading university in the field of welding research. The potential users of the results are closely linked to the project and it will give Colombia access to well established strength in the Canadian research and development system. There has apparently been excellent collaboration between the two groups. In spite of delays in delivery of equipment owing to customs problems, the training has gone ahead satisfactorily. The production sector has participated since the beginning. The local research group thus developed has become an important part of the project and participation is gradually extending. This project may go through a second phase, with extended work in compatible areas.

29. Coastal Management, Jamaica (Univ. West Indies/Dalhousie Univ.)
Project No. 3-P-84-1001, CPD
Project Officer: Aung Gyi

This project is intended to determine the impact produced by development of the coastal zone near Kingston and to set up managerial guidelines for the preservation of coastal zones. The results of this project should have application in other parts of Jamaica and in other countries of the Carribean. This is a complex multi-disciplinary project and therefore is partly experimental. Training component has been strongly emphasized at all levels in the University of West Indies. The project has proceeded satisfactorily and seminars have been attended not only by University of West Indies personnel, but by participants belonging to government and private agencies. This is a matter of great importance for Jamaica's development and probably for other countries in the Carribean and around the world. The building of research capacity received a set back as two of the chief researchers in the University of West Indies have retired. Nevertheless, the training in chemical and physical oceanography has been important.

30. Activated Carbon (National Univ. Colombia/Royal Military College)
Project No. 3-P-84-1032, CPD
Project Officer: R. Rowe

The project began only in February 1986 so is very new. The intent is to determine the technical and economic feasibility of obtaining activated carbon to meet the country's need at reasonable prices and with appropriate technology. This will involve the design, construction and

commission of a Fluidized Bed, Semi-Pilot Plant and to assess optimal operational parameters. In terms of cooperative relationship, not only will the National University of Chile and the Royal Military College be involved, but so also will French laboratories and Queen's University. Several students have already been given thesis topics that relate to the project. It is expected that their research capacity will be greatly advanced. The use of the fines from local coal would be a great advantage for Colombian development. The investigator pointed out that the people in Colombia appeared to lack concrete information on the potential market for activated carbon and the specifications of the product. Obviously, there is much to be done.

31. Oysterseed, Jamaica (Univ. West Indies/Dalhousie Univ.)
Project No. 3-P-84-1043, AFNS/CP
Project Officer: A. McNaughton

The project has been going for about a year. Its objective is to develop methods for the production of seed oysters in Jamaica and the reduction of oyster mortality during growth. To do this, it is proposed to develop techniques for the production of "seeds" appropriate to the biological and economic conditions of Jamaica and to establish the causes of, and to develop methods for the control of oyster mortality. There has been excellent cooperation between the institutions. The experience and results obtained from a previous project developed in Jamaica with IDRC on oyster culture is being used. The knowledge and experience of the Canadian group was transferred to the Jamaican group. Senior researchers are being given post-graduate training through the fellowships and awards division. It is hoped that the unit in Jamaica will be able to ensure and increase its production, and the productivity of oysters. It looks as though an important result of the project will be a creation of a research group with basic knowledge on oyster culture with, however, the danger that they will be lost because of higher salaries offered elsewhere, a normal risk. The IDRC is complimented for topping up salaries of researchers.

32. Self-help Organizations in Chile (Chile Univ./York Univ.)
Project No. 3-P-85-1026, SS/CP
Project Officer: M. Gomes/M. Torres

The project is intended to determine the number, nature and membership of self-help organizations, to conduct an analysis of the evolution and organizational structures of organizations operating in health, housing, and other areas, and to study the impact of these organizations as compared with government-operated agencies or those run by non-governmental agencies. The way in which skills and requirements are met in both Chile and Canadian groups allows for a balanced approach that could result in mutual benefits. The project is in its early stages, and is important to Chile and indeed to all Latin American countries. Plans are already underway to ensure adequate dissemination of the results throughout the region. The project will improve research capacity. Although a non-governmental institution is working with the Canadians, the same budgetary policies prevail relative to local staff.

33. Seismic Resistant Adobé Housing, Peru (Pontificia Univ. Catolica/Concordia Univ.)
Project No. 3-P-85-1018, CPD
Project Officer: S. Fahmy/R. Rowe

This project is just nicely started in its attempt to evaluate the performance, when shaken by earthquakes, of houses built with adobé using structural reinforcement to improve traditional construction methods. The intention is to use reinforcement materials available locally and to do so at minimum costs. In the end, they hope to develop structural design criteria for the construction of seismic resistant adobé houses. The laboratory in Peru has been built and endowed through the Netherlands government, which provided the equipment and elements necessary. First studies were made through another project undertaken jointly with USAID. Thus a team of researchers has already been formed which will be integrated with the work of the Canadian group. Since the country is located along the seismic belt and a large portion of the houses of the poor are made of adobé, the success of the project can save many lives. It may also have application for other areas along the western side of the Americas with similar seismic risks and construction methods.

34. Carmine from Cochineal (ITINTEC, Peru/Simon Fraser Univ.)
Project No. 3-P-85-1029, CPD
Project Officer: R. Rowe

The major objective is to help to produce through improved process technology, numerous dispersed, small-scale carmine-extraction industries based on the Cochineal insect. This project was approved early in 1986 so is very new. Quality control is really the basic problem here as it will permit the establishment of what might be called a cottage industry. It is interesting that the chief researcher from Simon Fraser University has had great experience in the extraction of natural products, though nothing is mentioned of cochineal, an example of competence rather than expertise. A new team will be developed at ITINTEC and it may be necessary to involve cooperation with the agronomic and entomological groups in the project.

35. Symbioses Racinaires (Maroc/Laval Univ.)
Project No. 3-P-85-1007, AFNS/CP
Project Officer: A.K. Oka

This is basically an attempt to try reforestation in zones of desertification. It is planned to do this by studying the effect of the symbioses of mycorhizones on the growth of conifer species with a view of improving their growing success. Cooperation between Laval and the Moroccans has been excellent, except that the people at Laval got off rather too quickly and are now about six months or a year ahead of the Moroccans, though they will be in phase in about a year. Two Moroccans spent time at the University of Laval on training and visited about twenty Quebec reearchers belonging to five different institutions. Since the project is relatively new, all one can say is that it is well begun and no technical problems have raised the heads. Training has progressed well and should result in fully qualified Moroccan researchers.

36. Written Languages of India (Ministry of Home Affairs/Univ. Laval)
Project No. 3-P-82-1017, SS/CPD
Project Officer: R. DesRosiers

The project is an attempt to provide information on the existence and usage of the many languages which are used in day-to-day communications in India. This information is essential for the delivery of government services and the planning of education and literacy campaigns. There have been close collaborative relationships between the Indian governmental research body and Laval's Institute of Bilingualism. India has been able to profit from Canadian experience and research, and it appears that the collaborative effort was essential. It is expected that a volume on the written languages of India will be published. The Canadians seem confident that the results will be widely disseminated. They feel that the capacity for doing research will be improved but much more needs to be done. The situation has continued to evolve positively and if a follow-up of the project materializes, more emphasis might be given to the training component. This is an "open window" project.

ANNEX IV

GENERAL COMMENTS ON INTERNAL AUDIT REPORT

COOPERATIVE PROGRAMS DIVISION

AS AT APRIL 1985

(by J.M. Harrison)

Before commenting on the report itself, it may be worthwhile to express my own ideology with respect to Management. The primary function of administration is to facilitate the work of the unit concerned, not to impede it. One should hire the best possible people, have them understand what should be done, and then let them go to it with a minimum of interference. If at the end-of-year review, particular individuals are found to have been less successful than others, the reasons are needed. Control is a word that should rarely be applied to the work of professional staff. If it is needed, then the professional staff are not well chosen. The fewer the rules and regulations, the better, as it is too easy to hide behind rules instead of using good judgement. The least expensive way is not necessarily the best, although quite clearly an officer, who continually has "overheads" higher than his contemporaries, should be regarded with suspicion, unless of course his success rate is also higher than his contemporaries.

As far as the report itself is concerned, most of the recommendations make sense, but I must confess that some I do not quite understand. Moreover, the Division has two people on strength who do many of the operational audits as part of their administrative role, which suggests too much preoccupation in the Audit Report with non-productive matters.

Many of the recommendations entail rather small changes in existing procedures, but almost without exception, each one is concerned with control or with reporting, and I am disturbed as an outsider that so much of program officers' time should be concerned with reporting rather than with getting on with the job. Some of the things are standard, such as "should ensure that a standard VCR format is prepared for the Division". One of the specific points that troubled me concerns travel management. CPD's staff travels approximately 60 days per year, whereas other divisions average about 100 days a year. That is slightly more than half as much, yet the average trip duration of 14 days for CPD compared with 21 days for other divisions is considered to be due in part to a lack of adequate travel planning. Nothing whatever was said about the needs of the projects. Surely, these sorts of statistics are examined by the Division at its annual staff meetings.

The Auditors stated that the most important recommendation regarding program A is that "common rules" should be jointly developed to establish divisional program boundaries. This strikes me as excessively bureaucratic for an organization, which to my way of thinking, is already too structured. There should not be walls between divisions and one of the ways of developing cooperation between CPD and other divisions, is to have projects that do straddle the boundaries. This would be beneficial for the organization and provide the Management Committee with some interesting topics.